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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,409	08/28/2001	Toyoaki Sugaya	4767 (47539.15)	6134

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EXAMINER

TRAN, LY T

ART UNIT PAPER NUMBER

2853

DATE MAILED: 10/24/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

8-5

Office Action Summary

Application No. 09/941,409		Applicant(s) SUGAYA ET AL.	
Examiner Ly T TRAN		Art Unit 2853	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) 5,6,9-16 and 24-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4,7,17-23,31 and 32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of characteristic 1D, 2A, 3A and 4A in Paper No. 7 is acknowledged.

Claim Objections

2. Claims 3, 4, 17-23 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Applicant has not recited any structure in claims 3,4,7 and 17-23, instead applicant has recited functional language of how the previously recited structure is to be used. Since these claims are apparatus claims, they must be limited by reciting further structural limitations. See MPEP 2114

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

3. Claims 1, 2, 4, and 31-32 are rejected under 35 U.S.C. 102(e) as being anticipated by Takekoshi (USPN 6,120,199).

With respect to claims 1 and 31, Takekoshi discloses an ink jet apparatus and a method comprising:

- A recording head to conduct recording by jetting an ink onto a recording medium (Abstract) having an ink receiving layer containing thermoplastic resin particle on a surface and a pigment ink solvent absorbing layer adjoining to an inner side of the ink receiving layer (Column 3: line 5-21).
- A heating and pressing device to heat and press the recording medium so as to make the ink receiving layer of the recording medium to be transparent (Column 3: line 22-32)
- A conveyor to convey the recording medium to the recording head and further to the heating and pressing device (Column 3: line 64-67).
- A temperature controller to control a heating temperature by the heating and pressing device within a range of $T_0 \pm \Delta T$, where T_0 is 50°C to 150 °C

and ΔT is not larger than 10°C (Column 9: line 24-25, Column 10: line 40-42)

With respect to claims 2 and 32, Takekoshi discloses and an apparatus and a method wherein T_0 is $80\text{-}130^{\circ}\text{C}$ (Column 9: line 24-25).

With respect to claim 4, Takekoshi discloses the ink jet recording apparatus is adapted to record an image on one of plural kinds of recording medium (Column 3: line 5-7) and the temperature controller changes the heating temperature in according with the kind of the recording medium (Column 9: line 27-28).

With respect to claims 3-4, 7 and 17-23, since these claims do not recited further structure, therefore they are rejected along with the parent claims.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takekoshi (USPN 6,120,199) in view of Iwao (USPN 6,390,617).

Takekoshi fails to teach a pressing force of 9.8×10^4 to 4.9×10^6 Pa.

Iwao teaches a pressing force is 4.4 kg which is 4.3×10^5 Pa (Column 11: line 10)

It would have been obvious to one having ordinary skill in the art at the time the invention was made with the pressing force of 4.3×10^5 Pa as taught by Iwao. The motivation to doing so is in order to make the ink stick on the medium more properly therefore obtain the high quality image.

5. Claims 17-19 and 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takekoshi (USPN 6,120,199) in view of Kaburagi et al (USPN 5,502,475).

Takekoshi fails to teach when the recording does not conduct recording during a predetermined time period, the temperature controller stop controlling the heating temperature such that the heating and pressing device stop heat generation, controlling the heating temperature after the temperature controller stopped the controlling, the heating and pressing device conduct heating and pressing by prolong relatively a heating and pressing time period after the heating temperature becomes higher than a lowest heating temperature and until the heating temperature becomes within a predetermined temperature range, recording apparatus does not conduct recording during a predetermined time period, the temperature controller controls such that the heating and pressing device keep the temperature within a second temperature lower than the range and recording does not conduct recording during a predetermined time period, the temperature controller controls such that the heating and pressing device keeps the heating temperature within a second temperature lower than the range and further when the recording does not conduct recording during a predetermined another

time of period, the temperature controller stop the heating temperature such that the heating and pressing device stop heat generation and changing the feeding speed.

Kaburagi et al. teaches when the recording does not conduct recording during a predetermined time period, the temperature controller stop controlling the heating temperature such that the heating and pressing device stop heat generation, controlling the heating temperature after the temperature controller stopped the controlling, the heating and pressing device conduct heating and pressing by prolong relatively a heating and pressing time period after the heating temperature becomes higher than a lowest heating temperature and until the heating temperature becomes within a predetermined temperature range, recording apparatus does not conduct recording during a predetermined time period, the temperature controller controls such that the heating and pressing device keep the temperature within a second temperature lower than the range and recording does not conduct recording during a predetermined time period, the temperature controller controls such that the heating and pressing device keeps the heating temperature within a second temperature lower than the range and further when the recording does not conduct recording during a predetermined another time of period, the temperature controller stop the heating temperature such that the heating and pressing device stop heat generation (Column 8: line 9-22, line 45-64, Column 9; line 1-3, 28-64) and changing the feeding speed (Column 12: line 15-16)

It would have been obvious to one having ordinary skill in the art at the time the invention was made with controlling the temperature as taught by Kaburagi et al. The motivation of doing so is order to improve the fixativeness on the ink onto the sheet.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takekoshi (USPN 6,120,199) in view of Kaburagi et al (USPN 5,502,475) as applied to claims 1 and 19 above, further in view of Silverbrook (USPN 5,815,173)

The combination of Takekoshi and Kaburagi discloses the claimed invention except that using a scanning head instead of full line head. Silverbrook shows that the scanning head and full line head is an equivalent structure known in the art (Column 25: line 37-40). Therefore, because these two scanning head and full line head were art recognized equivalents at the time the invention was made, one of ordinary skill in the art would have found it obvious to substitute the full line head for the scanning head.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takekoshi (USPN 6,120,199) in view of Kaburagi et al (USPN 5,502,475) as applied to claim 1 and 19 above, further in view of Nakano et al. (USPN 6,012,794).

The combination of Takekoshi and Kaburagi fails to teach the recording head prolongs the recording time period by adjusting a stop time at which a scanning direction is changed.

Nakano et al. teaches the recording head prolongs the recording time period by adjusting a stop time at which a scanning direction is changed (Abstract, Column 13: line 25-35).

It would have been obvious to one having ordinary skill in the art at the time the combined invention was made with the recording head prolongs the recording time period by adjusting a stop time at which a scanning direction is changed as taught by

Nakano et al. The motivation of doing so is in order to obtain a high precision regardless of trembles of ink surface (Nokano USPN 6,012,794, Column 1: line 35-36)

Conclusion

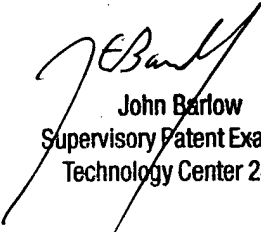
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ly T TRAN whose telephone number is 703-308-0752. The examiner can normally be reached on M-F (7:30am-5pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 703-308-3126. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7722 for regular communications and 703-308-7724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0967.



October 10, 2002



John Barlow
Supervisory Patent Examiner
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